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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,304	11/25/2003	Roger Harquail French	CL2242USNA	9072

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EXAMINER

PERLINGER, SARAH E

ART UNIT PAPER NUMBER

1625

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/722,304	<b>Applicant(s)</b> FRENCH ET AL.	
	<b>Examiner</b> Sarah E. Perlinger	<b>Art Unit</b> 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 3-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/05/2004</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-8 are pending. Claims 3-8 are withdrawn from consideration as being drawn to non-elected inventions.

2. ***Election/Restrictions***

Applicant's election without traverse of Group I (claims 1-2 as they read on formula I) in the reply filed on February 7, 2006 is acknowledged.

During a telephone conversation with Mr. S. Neil Feltham on March 27, 2006, a provisional election of species of Example 9 was made. Affirmation of this election must be made by applicant in replying to this Office action. Claims 3-8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. ***Oath/Declaration***

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application, by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not state that the person making the oath or declaration has reviewed and understands the contents of the **specification**, including the claims, as amended by any amendment specifically referred to in the oath or declaration.

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either an application data sheet or supplemental oath or declaration.

4. ***Specification***

The disclosure is objected to because of the following informalities: the application number is not present on the first page of the specification.

Appropriate correction is required.

5. ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the limitation “wherein A is independently selected from... wherein at least one of F, -CN, *and* S-C(=O)-CH<sub>3</sub> is present” means. It is suggested that the limitation be stated, “wherein A is independently selected from the group consisting of... wherein at least one of F, -CN, *or* S-C(=O)-CH<sub>3</sub> is present” or “... wherein at least one A is selected from the group consisting of F, -CN, *and* S-C(=O)-CH<sub>3</sub>”.

6. ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Blumstein et al. US 5,037,916.

See US 5,037,916, column 11, Example 3 which anticipated the claim when both R groups are a pyridine.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hay et al. US 5,233,046.

See US 5,233,046, column 8, lines 30-35 that anticipated the claim when both R groups are a phenyl wherein one of A is F.

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8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by WO 02/35580.

See WO 02/35580 Figure 4(b)-3 which anticipated the claim when one R group is a phenyl substituted by CN and the other R group is a phenyl substituted by S-C(=O)-CH<sub>3</sub>. Also see Figure 4(b)-4 which anticipated the claim when one R group is a pyridine and the other R group is a phenyl substituted by S-C(=O)-CH<sub>3</sub>.

9. ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hay et al. US 5,233,046 in view of Blumstein et al. US 5,037,916.

Determination of the scope and content of the prior art (MPEP § 2141.01)

Hay et al. generically disclose a structurally similar compound against the base claim as delineated (see US 5,233,046, column 8, line 11).

Ascertainment of the difference between the prior art and the claims (MPEP § 2141.02)

The difference between the instant claimed compound and the reference compound is that instead of one of the R groups being a substituted pyridine, the instant claimed compound has one of the R groups as an unsubstituted pyridine (see US 5,233,046, column 8, line 11 wherein Ar<sub>5</sub> is pyrene wherein x, y, z=0 or phenyl). Blumstein et al. however disclose a structurally similar compound wherein one of the R groups is an unsubstituted pyridine (see US 5,037,916, column 11, Example 3). Furthermore, Example 44 of US 5,233,046 also discloses a structurally similar compound wherein one of the R groups is an unsubstituted pyridine (see US 5,233,046, column 20, Example 44).

Finding of prima facie obviousness-rationale and motivation (MPEP § 2142-2143)

One having ordinary skill in the art in possession of US 5,233,046 and US 5,037,916 would be in possession of such modification as one of the R groups being an unsubstituted pyridine **because**

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such modification has been clearly guided to one skilled in the art in the reference by exemplification of other analogous compounds. Both references teach processes of synthesizing acetylene-containing polymers (see US 5,233,046, column 3, lines 32-34 and US 5,037,916, column 1, lines 40-41). Furthermore, US 5,233,046 demonstrated success in synthesizing the structurally similar compound wherein one of the R groups was an unsubstituted pyridine (see US 5,233,046, column 20, Example 44). One having ordinary skill in the art would be motivated to make such modification as an unsubstituted pyridine R group knowing that reasonable success has been demonstrated in analogous compounds. It is prima facie obvious to modify one known compound with *attributes* proven in analogous compounds.

10. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hay et al. US 5,233,046.

Determination of the scope and content of the prior art (MPEP § 2141.01)

Hay et al. generically disclose structurally similar compounds against the base compound as delineated (see US 5,233,046, column 8, lines 10-12 wherein Ar<sub>4</sub> is phenyl wherein R=F and x=3 and Ar<sub>5</sub> is pyrene wherein x, y and z=0).

Ascertainment of the difference between the prior art and the claims (MPEP § 2141.02)

The difference between the instant claimed compound and the reference compound is that instead of one of the R groups being a phenyl substituted by 4 fluorine atoms and 1 hydrogen atom, the instant claimed compound has one R group being a phenyl substituted with 5 fluorine atoms (see claim 2, compound h). Hay et al. however, disclose fluorine and hydrogen as being interchangeable substituents on the aryl group (see US 5,233,046, column 8, line 20, definition of X).

Finding of prima facie obviousness-rationale and motivation (MPEP § 2142-2143)

One having ordinary skill in the art in possession of US 5,233,046 would be in possession of the instant claims **because** the generic disclosure fully encompassed the species of the instant claims (see US 5,233,046, column 8, lines 10-12 wherein Ar<sub>4</sub> is phenyl wherein R= F and x=3 and Ar<sub>5</sub> is pyrene wherein x, y and z=0). Furthermore, the teaching of fluorine and hydrogen as interchangeable substituents on the aryl group would render the instant claimed species wherein one of the R groups is a pentafluorophenyl, obvious (see US 5,233,046, column 8, line 20, definition of X). Finally, it would have been obvious to one having ordinary skill in the art at the time of the invention, to prepare any of the species of the genus taught by the reference, including those of the claims, because an ordinary artisan would have the reasonable expectation that all of the species of the genus would have similar properties and, thus, the same use as the genus as a whole (see *In re Lemin* 141 USPQ 814).

11. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lau et al. US 6,303,733 in view of WO 02/35580.

Determination of the scope and content of the prior art (MPEP § 2141.01)

Lau et al. US 6,303,733 and analogous art WO 02/35580 disclose structurally similar compound against the claims as delineated (see US 6,303,733, Figure 2A and WO 02/35580, Figure 4).

Ascertainment of the difference between the prior art and the claims (MPEP § 2141.02)

The difference between the instant claimed compound (compound (i) of claim 2) and the reference compound is that instead of the phenyl being substituted with an acetyl fluoride group, the

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phenyl of the instant claimed compound is substituted with an  $-\text{SC}(\text{O})\text{CH}_3$  group. WO 02/35580 however, teaches a structurally similar compound wherein the phenyl group is substituted with an  $-\text{SC}(\text{O})\text{CH}_3$  group (see WO 02/35580, Figure 4(a)-5).

Finding of prima facie obviousness-rationale and motivation (MPEP § 2142-2143)

One having ordinary skill in the art in possession of US 6,303,733 and WO 02/35580 would be in possession of such modification as a phenyl substituted with an  $-\text{SC}(\text{O})\text{CH}_3$  group **because** such modification has been clearly guided to one skilled in the art in the reference by exemplification of other analogous compounds. Both references disclose materials used for micro/molecular-scale electronic devices (see US 6,303,733, column 1, lines 19-21 and WO 02/35580, page 1). Both references also disclose structurally similar compounds wherein the triply-bonded carbon have the equivalent substituents of phenyl, phenyl substituted with an alkyl group, or a phenyl substituted with a carbonyl group (see WO 02/35580, Figure 4 and 6,303,733, Figures 1, 2A and column 6). Furthermore, WO 02/35580 demonstrated success in utilizing the structurally similar molecules comprising the phenyl substituted with an  $-\text{SC}(\text{O})\text{CH}_3$  group in molecular scale electronic devices, also called MFET's (see WO 02/35580, page 1 and pages 162-163). One having ordinary skill in the art would be motivated to make such modification as a phenyl substituted with an  $-\text{SC}(\text{O})\text{CH}_3$  group since both references taught equivalent substituents for the triply-bonded carbon and reasonable success had been demonstrated in analogous compounds of WO 02/35580. It is prima facie obvious to modify one known compound with *attributes* proven in analogous compounds.

12.

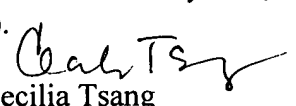
**Conclusion**

None of the claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Sarah E. Perlinger, whose telephone number is (571) 272-5574. The examiner can normally be reached on Monday through Friday, 8:30 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Cecilia Tsang, can be reached at (571) 272-0562. The fax number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DP  
03/28/2006  
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